

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2016/2017

### HAP 1011 – Human Anatomy & Physiology

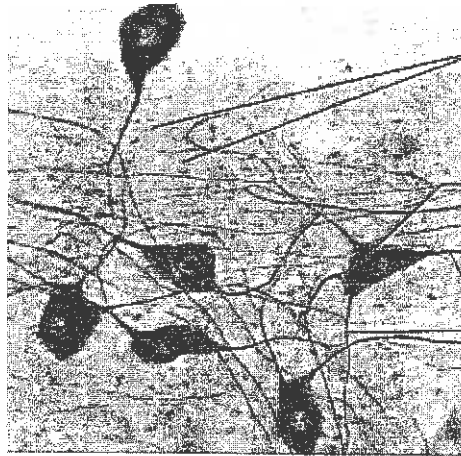
7 OCT 2016.  
9.00am – 11.00am  
(2 hours)

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#### INSTRUCTIONS TO STUDENTS

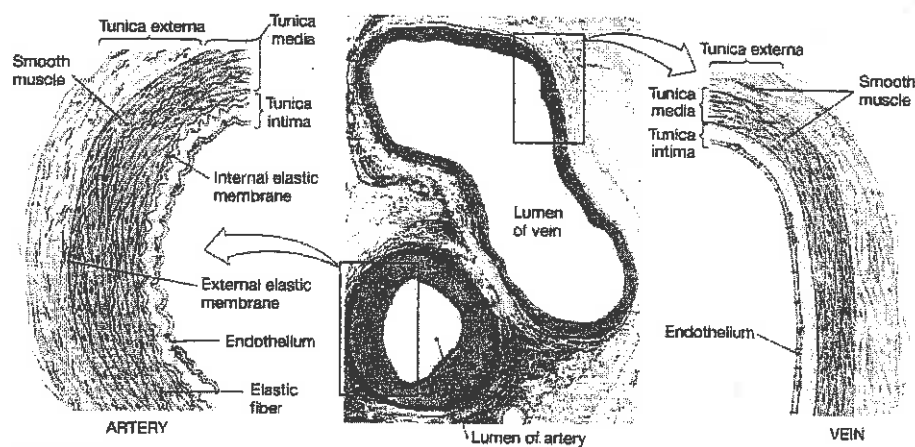
1. This question paper consists of 5 printed pages, including this cover page.
2. All questions are worth 10 marks each.
3. Question 1 is a compulsory question. For questions 2 to 7 attempt **FIVE out of SIX** questions.
4. Please print all your answers in the answer booklet provided.

## Question 1



- Referring to the photomicrograph above, please name the type of tissue. 1 mark
- Where can you find this type of tissue in Frog? 2 marks
- What are the functions of this type of tissue in human body? 4 marks
- Name 3 types of disease that are caused by infection or damage of this type of tissue 3 marks

## Question 2



- Referring to the photomicrograph above, compare and contrast the features of an artery and vein 3 marks
- Given the fact that multiple systems are involved in regulation of blood pressure in animal, please **create** a mind map or concepts relationship chart to help explain to your peers about blood pressure (BP) regulation. 6 marks
- Name a hormone that produce in Kidney for BP regulation 1 mark

continued...

## Question 3

The intrinsic cardiac conduction system is able to initiate and distribute impulses throughout the heart, so that it depolarizes and contracts in a sequential manner. 7 marks

- a. With the aid of a diagram, discuss the conduction system of the heart
- b. Why Fetal Heart Rate is always more than 110 beat per minute ? 1 mark
- c. If a patient is given a drug that will block sympathetic nervous system, what will happen to the patient heart rate and state the reason behind this side effect. 2 marks

## Question 4

Neuron and endocrine glands have been the most established system in regulation of involuntary process in animal. Recent studies have discovered that many organs such as Kidney and Lung have been shown to be contain specialized cells that produce ligands that may cause reaction in distant tissue.

- a) In addition to the renin-angiotensin mechanism, the renal cells produce other chemicals. List TWO of these chemicals and briefly state their functions. 4 marks
- b) Explain the role of aldosterone in sodium and water balance. 4 marks
- c) A man has been told that he is *not* synthesizing enough follicle-stimulating hormone (FSH), and for this reason he may be unable to father a child. Explain this problem. 2 marks

## Question 5

- a) Explain why the nervous system can be considered an information-processing unit. Identify the basic units of the nervous system that perform this task. 2 marks
- b) Compare and contrast the functions and characteristics of the endocrine and nervous system with regard to its' "transmitters", "transmission methods", target tissues and organs. 4 marks
- c) The venom of many cobras contains a potent neurotoxin that binds to ligand-gated  $\text{Na}^+$  channels, causing them to open. Unlike Acetylcholine (ACH), which binds to and then rapidly unbinds from ligand-gated  $\text{Na}^+$  channels, the neurotoxin tends to remain bound to ligand-gated  $\text{Na}^+$  channels. How does this neurotoxin affect the nervous system's ability to stimulate skeletal muscle contraction? How does it affect the ability of skeletal muscle contraction? 4 marks

continued...

**Question 6**

- a) What physical features must lung components have for the respiratory system to function effectively? 4 marks
- b) Square Pant wanted to do some underwater exploration. Instead of buying expensive SCUBA equipment, she obtained a long hose and an inner tube. She attached one end of the hose to the inner tube so that the end was always out of the water, and she inserted the other end of the hose in her mouth and went diving. What happened to her alveolar ventilation and why? How can she compensate for this change? How does diving affect lung compliance and the work of ventilation? 4 marks
- c) Based on your answer to above situation, please explain how SCUBA equipment helps the diver underwater 2 marks

**Question 7**

- a) Describe why is it necessary for the stomach contents to be so acidic. Briefly explain how the mucous cell lining the stomach protects itself from digestion. 2 marks
- b) What process(es) of digestion take place in the small intestine? 6 marks
- c) Name 2 components of Pancreatic Juice 2 marks

**END OF PAPER**